

CLAIMS

What is claimed is:

1. A prosthetic heart valve comprising:

a polymeric valve body having at least one leaflet, said leaflet having an open position and a closed position,

a stent coupled to said valve body, said stent having a plurality of apertures, said apertures being exposed outside said polymeric valve body.

2. The prosthetic heart valve of claim 1 wherein said stent comprises a base circumferentially disposed around said valve body and wherein said apertures penetrate said base.

3. The prosthetic heart valve of claim 2 wherein said polymeric valve body encloses said base and includes a plurality of apertures in said polymeric valve body corresponding to said apertures in said base.

4. The prosthetic heart valve of claim 2 wherein said polymeric valve body encloses only a portion of said base, said portion not including said plurality of apertures in said base.

5. The prosthetic heart valve of claim 2 wherein said stent comprises a plurality of commissures in generally cylindrical configuration and said base is connected to said commissures at an upstream location and said base slants radially outwardly from said commissures.

6. The prosthetic heart valve of claim 5 wherein a junction between said commissures and said base forms an angle of between 90° and 135°.

7. The prosthetic heart valve of claim 2 further comprising a sewing ring circumferentially surrounding the valve body.

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8. The prosthetic heart valve of claim 7 wherein said sewing ring is connected to said base at an upstream, inner side of said base.
9. The prosthetic heart valve of claim 2 wherein at least some of said apertures are slots.
10. The prosthetic heart valve of claim 9 wherein at least one of said apertures is generally circular.
11. The prosthetic heart valve of claim 1 further comprising a sewing ring circumferentially surrounding the valve body and the stent and attached to the stent by fasteners extended through said apertures in said stent.
12. The prosthetic heart valve of claim 11 wherein the fasteners are sutures.
13. The prosthetic heart valve of claim 1 wherein said stent further comprises an upstream edge and a wire connected to said edge wherein the suture apertures are downstream from said wire.
14. The prosthetic heart valve of claim 13 further comprising a sewing ring circumferentially surrounding the valve body and the stent and attached to the stent by fasteners extended through said apertures in said stent.
15. The prosthetic heart valve of claim 14 wherein the fasteners are sutures.
16. The prosthetic heart valve of claim 2 wherein ¹⁰⁶the ring comprises a fabric reinforcement.
17. A prosthetic heart valve comprising:
a polymeric valve body having at least one leaflet, said leaflet having an open position and a closed position,

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a stent molded within said valve body, said stent having a plurality of apertures,
5 said apertures being exposed through said polymeric valve body.

18. The prosthetic heart valve of claim 17 wherein said stent comprises a base circumferentially disposed around said valve body and wherein said apertures penetrate said base.

19. The prosthetic heart valve of claim 18 wherein said polymeric valve body encloses said base and includes a plurality of apertures in said polymeric valve body corresponding to said apertures in said base.

20. The prosthetic heart valve of claim 18 wherein said polymeric valve body encloses only a portion of said base, said portion not including said plurality of apertures in said base.

21. The prosthetic heart valve of claim 18 wherein said stent comprises a plurality of commissures in generally cylindrical configuration and said base is connected to said commissures at an upstream location and said base slants radially outwardly from said commissures.

22. The prosthetic heart valve of claim 21 wherein a junction between said commissures and said base forms an angle of between 90° and 135°.

23. The prosthetic heart valve of claim 18 further comprising a sewing ring circumferentially surrounding the valve body.

24. The prosthetic heart valve of claim 23 wherein said sewing ring is connected to said base at an upstream, inner side of said base.

25. The prosthetic heart valve of claim 18 wherein at least some of said apertures are slots.

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26. The prosthetic heart valve of claim 25 wherein at least one of said apertures is generally circular.

27. The prosthetic heart valve of claim 17 further comprising a sewing ring circumferentially surrounding the valve body and the stent and attached to the stent by fasteners extended through said apertures in said stent.

28. The prosthetic heart valve of claim 27 wherein the fasteners are sutures.

29. The prosthetic heart valve of claim 17 wherein said stent further comprises an upstream edge adjacent blood flowing into the valve and a wire connected to said upstream edge wherein the suture apertures are downstream from said wire.

30. The prosthetic heart valve of claim 29 further comprising a sewing ring circumferentially surrounding the valve body and the stent and attached to the stent by fasteners extended through said apertures in said stent.

31. The prosthetic heart valve of claim 30 wherein the fasteners are sutures.

32. The prosthetic heart valve of claim 29 wherein said stent further comprises a base, said base having a downstream edge, and said apertures being in said base, and being closer to said downstream edge than to said upstream edge.

33. The prosthetic heart valve of claim 18 wherein the ring comprises a fabric reinforcement.